

LABORATORY SAFETY

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"They hate it when you carry the testtubes that way."

- : follow instruction, make sure you understand procedures, show respect and courtesy for teacher and classmates, wear proper safety equipment be careful keep your work are neat and clean

Safety First



- Science is a hands-on laboratory class.
- You will be doing many laboratory activities, which require the use of hazardous chemicals and expensive lab equipment.
- Safety in the science classroom is the #1 priority.
- To ensure a safe science classroom, a list of rules has been developed and provided to you in your student safety contract.
- These rules must be followed at all times.
- A signed lab safety contract is required to participate in labs.

Understanding Symbols

DIFFERENT SYMBOLS MAY HAVE THE SAME MEANING

- Use care when using open flames



DON'T USE CIRCLE W/LINE THROUGH SYMBOL

- Symbol appears when use of an open flame could cause a fire or explosion



Using chemical signs

POISONOUS SUBSTANCE



CHEMICALS CAN BE

- absorbed through the skin
- Ingested
- Inhaled

Explosion



Corrosive



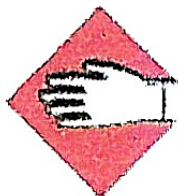
Safety Symbols

Chemical Safety



- Read all labels twice before removing a chemical from the container. Never return chemicals to container
- Never touch, taste, or smell a chemical unless instructed by the teacher.
- Transfer chemicals carefully!

Hand Safety



- If a chemical spills on your skin, notify the teacher and rinse with water for 15 minutes.
- Carry glassware carefully.

Plant Safety



- Do not eat any plants in lab.
- Wash your hands after handling plants.

Safety Symbols

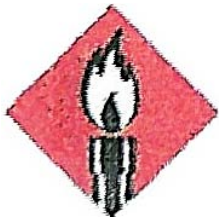


Animal Safety



- Only handle living organisms with teacher permission.
- Always treat living organisms humanely.
- Wash your hands after handling animals.

Heating Safety



- Tie back hair and loose clothes when working with open flames.
- Never look into a container as you are heating it.
- Heated metal and glass looks cool, use tongs or gloves before handling.
- Never leave a heat source unattended.

III. Safety

FOLLOW ALL INSTRUCTIONS CAREFULLY

- Be Responsible at All Times.
- Do not play with lab equipment until instructed to do so.
- Always clean materials and desk area after the lab

KNOW THE MEANING OF THE SYMBOLS



Sharp/pointed object



Electrical hazard



Dangerous
chemical/poison

Lab Safety: Everyone Is Responsible

Safety Symbols



Sharp Objects



- When using knives or other sharp objects always walk with the points facing down.
- Cut away from fingers and body.

Electrical Safety



+ electrical hazard

- Do not place a cord where someone can trip over it.
- Never use electricity around water.
- Unplug all equipment before leaving the room.

Lab Rules

- Use aprons, goggles and gloves as instructed



Wear lab apron



Wear safety goggles



Wear gloves

Be alert – not just in the classroom

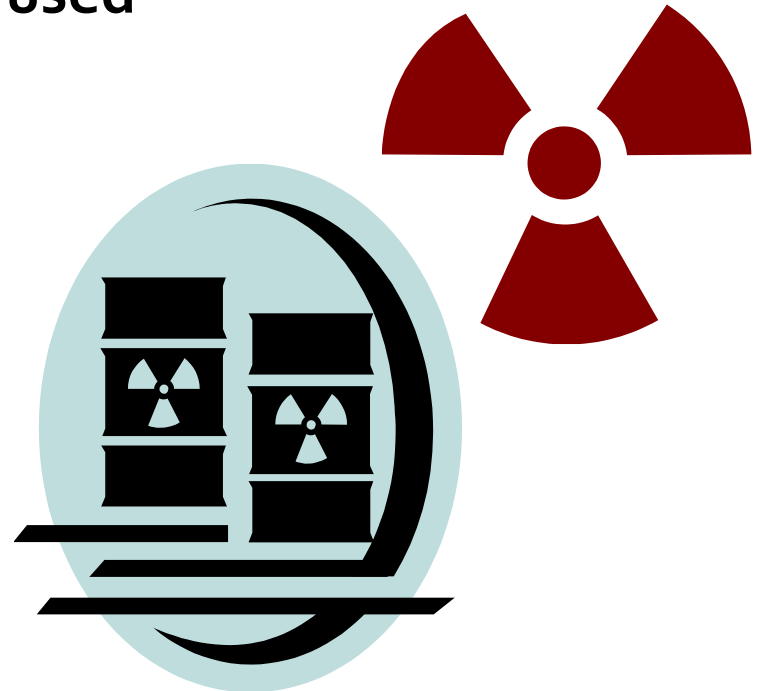
BIOLOGICAL SAFETY

- Appears when there is danger involving bacteria, fungi or protist.



RADIOACTIVE SAFETY

- Appears where radioactive materials are used





New
International
Symbol
Launched to
Warn Public
About Radiation
Dangers

This is the UN's Globally
Harmonized System sign
for
carcinogens
mutagens
teratogen
respiratory sensitizers
and substances with
target organ toxicity.





Animal hazard



Sharp instrument hazard



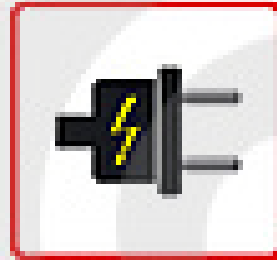
Heat hazard



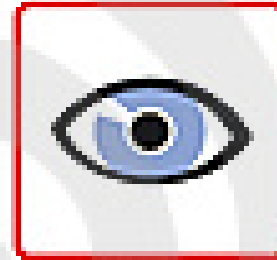
Glassware hazard



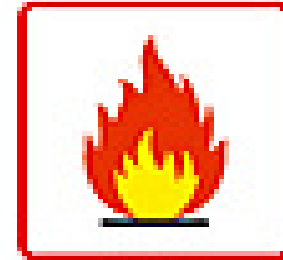
Chemical hazard



Electrical hazard



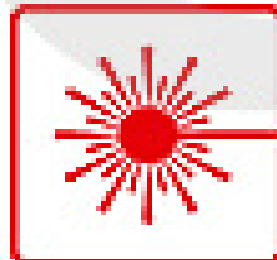
Eye & face hazard



Fire hazard



Biohazard



Laser radiation hazard



Radioactive hazard



Explosive hazard

Safety Symbols

Eye Protection



- Wear safety goggles when working with chemicals, flames, or heating devices.
- If a chemical gets in your eye, flush in water for 15 minutes and notify the teacher.
- Hold eyes open



Lab Rules



- **Wear proper eye protection. Notify teacher if you use contacts.**
- Chemicals trapped under contacts will damage the eye even more than normal.
- **Know the location of the eye wash equipment**

Lab Rules



- Read the experiment and precautions before beginning a lab



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- no unauthorized experiments or working alone

Lab Rules

- No food/gum/drink, etc. In labs
- Never taste anything in the lab unless instructed to do so by the teacher
- Make sure your hands are clean before leaving

III. Safety Rules

- Keep the work area uncluttered
- Keep materials away from edge

Dress appropriately

- Tie back long hair
- remove jewelry
- No sandals or open toed shoes
- control sleeves-etc.
- Corrosive or irritating liquids may get underneath a ring or watch and produce irritation.
- Dangling jewelry may catch on a piece of labware and cause an accident.

Lab Rules

- Do not put chemicals back into stock containers



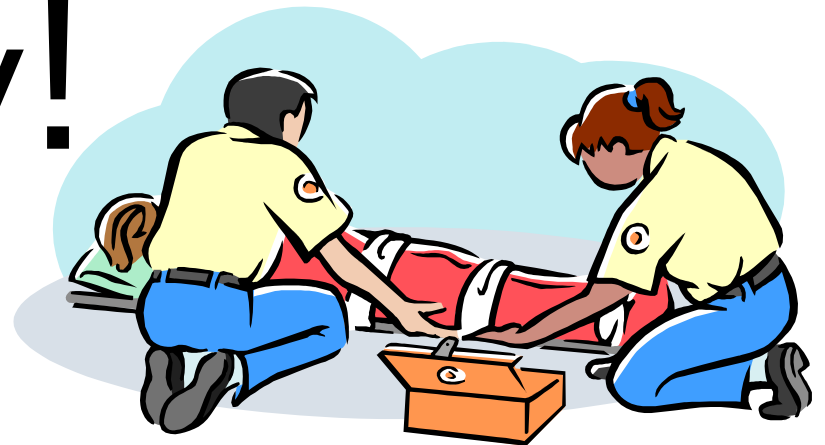
Lab Rules

- Do not use the sink to discard materials
- Dispose of waste materials as instructed



III. Safety Rules

- Mature Attitude- No Horseplay!



Lab Rules

- Notify the teacher of hazardous conditions or accidents



Identify locations and know how to use safety equipment

- Location of phone
- exits
- First aid kit
- fire extinguishers
- Eye wash fountain
- other emergency devices locations

Lab Rules

- Never heat thick-walled glass
- Always add Acids- AAA
- Don't point test tubes



Odors

- **Danger inhaling**
- IF you need to ID an odor-
- Waft (wave) the fumes toward you face
- **NEVER INHALE ODORS DIRECTLY FROM CONTAINER**

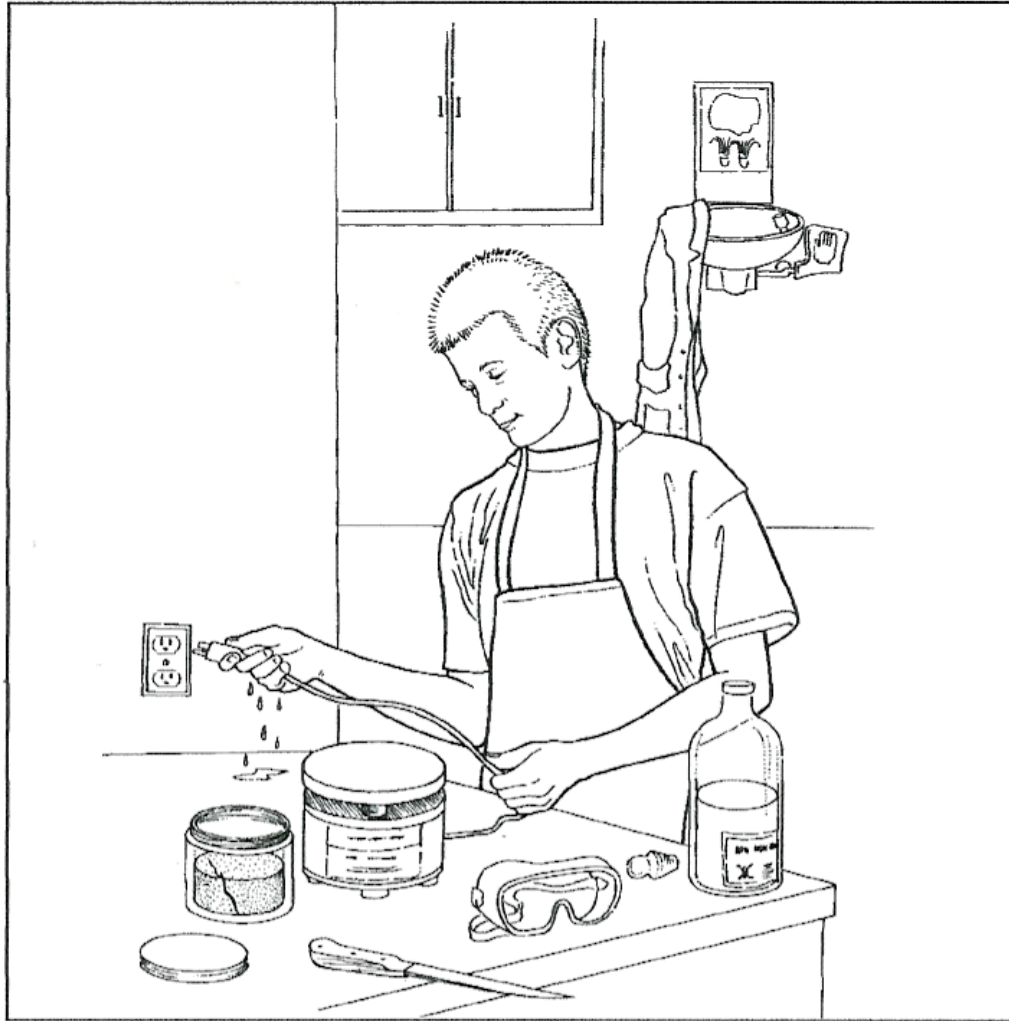
- **Danger-Fumes**



Notify the teacher immediately of any accidents or unsafe conditions in the science classroom!

Lab Safety: Everyone Is Responsible

What's Wrong With This Picture?



What's Wrong With These Statements?

- Hal says that his teacher is solely responsible for preventing laboratory accidents.
- Keshia started the lab activity before reading it through completely.
- Ricardo decided to do a lab activity that he read about in a library book before the teacher came into the classroom.

What's Wrong With These Statements?

- **Stephanie says that the safety goggles mess up her hair and give her raccoon eyes. She refuses to wear them.**
- **Barbie and Ken accidentally break a beaker full of some chemical. Instead of risking getting in trouble they quickly clean up the mess with paper towel and throw it in the garbage.**

Any Questions?

REMEMBER:

- Carefully read through the entire safety contract and sign.
- Have your parents read and sign your safety contract.
- Study for the safety quiz later this week!



You are to treat all chemical spills as DANGEROUS.



- Stop where you are and let your teacher advise you .
- Did any of the spill get on your skin or clothing? Sometimes adding water is the worst thing you can do.
- Depending on the chemical spilled, we might just have a mess to clean up or we might have a very dangerous situation.
- The most potentially dangerous chemicals used in our lab are corrosive acids and bases. Even though you will normally be using chemicals that have been diluted, you should always treat acids and bases with care.
- Glass breakage often occurs along with chemical spills. If that happens, follow those safety precautions too.